Appendix A

nop	IGNORE_OPCODE
aconst_null	OP_PUSHB
iconst_ml	OP_PUSHB
iconst_0	OP_PUSHB
iconst_1	OP_PUSHB
iconst_2	OP_PUSHB
iconst_3	OP_PUSHB
iconst_4	OP_PUSHB
iconst_5	OP_PUSHB
lconst_0	OP_PUSHL
lconst_1	OP_PUSHL
fconst_0	OP_PUSH
fconst_1	OP_PUSH
fconst_2	OP_PUSH
dconst_0	OP_PUSHL
dconst_1	OP_PUSHL
bipush	OP_PUSHB
sipush	OP_PUSH
ldc	OP_PUSH
ldc_w	OP_PUSH
ldc2_w	OP_PUSHL
iload	OP_LOAD
lload	OP_LOADL
fload	OP_LOAD
d1oad	OP_LOADL
aload	OP_LOAD
iload_0	OP_LOAD
iload_1	OP_LOAD
iload_2	OP_LOAD
iload_3	OP_LOAD
lload_0	OP_LOADL
11oad_1	OP_LOADL
11oad_2	OP_LOADL

OP_LOADL
OP LOADL
OP LOAD
OP LOAD
OP_LOAD
OP_LOADL
OP_LOADL
OP_LOADL
OP_LOADL
OP_LOAD
OP_LOAD
OP_LOAD
OP_LOAD
OP_ALOAD
OP_STOR
OP_STORL
OP_STOR
OP_STORL
OP_STOR
OP_STORL
OP_STORL
OP_STORL
OP_STORL
OP_STOR
OP_STOR

fstore_2	OP_STOR
fstore_3	OP_STOR
dstore_0	OP_STORL
dstore_1	OP_STORL
dstore_2	OP_STORL
dstore_3	OP_STORL
astore_0	OP_STOR
astore_1	OP_STOR
astore_2	OP_STOR
astore_3	OP_STOR
iastore	OP_ASTORE
lastore	OP_ASTOREL
fastore	OP_ASTORE
dastore	OP_ASTOREL
aastore	OP_ASTORE
bastore	OP_ASTORE
castore	OP_ASTORE
sastore	OP_ASTORE
рор	OP_POP
pop2	OP_POP
dup	OP_DUP
dup_x1	OP_DUP
dup_x2	OP_DUP
dup2	OP_DUPL
dup2_x1	OP_DUPL
dup2_x2	OP_DUPL
swap	OP_SWAP
iadd	OP_IADD
ladd	OP_LADD
fadd	OP_FADD
dadd	OP_DADD
isub	OP_ISUB
Isub	OP_LSUB
fsub	OP_FSUB
dsub	OP_DSUB
imul	OP_IMUL

fmul OP_FMUL dmul OP_DMUL idiv OP_IDIV fdiv OP_LDIV fdiv OP_FDIV ddiv OP_DDIV irem OP_DDIV irem OP_IREM lrem OP_IREM frem OP_IREM drem OP_INEG lneg OP_INEG fneg OP_INEG dneg OP_INEG dneg OP_INEG dneg OP_INEG dneg OP_INEG ishl OP_ISHL lshl OP_ISHL lshl OP_ISHL lshr OP_ISHR lshr OP_ISHR <th>lmul</th> <th>OP_LMUL</th>	lmul	OP_LMUL		
Idiv	fmul	OP_FMUL		
Idiv	dmul	OP_DMUL		
fdiv OP_FDIV ddiv OP_DDIV irem OP_IREM Irem OP_LREM frem OP_FREM drem OP_DREM ineg OP_INEG Ineg OP_INEG dneg OP_INEG dneg OP_INEG ishl OP_ISHL Ishl OP_ISHL Ishr OP_ISHR Ishr OP_ISHR Iushr OP_IUSHR iand OP_IUSHR iand OP_IAND land OP_IAND ior OP_IOR lor OP_IOR lor OP_IXOR ixor OP_IXOR iinc OP_IXOR iinc OP_IINC i2l OP_I2D 12i OP_I2D 12i OP_I2D 12i OP_I2D 12i OP_I2D 12i OP_I2D 12i OP_L2F	idiv	OP_IDIV		
ddiv OP_DDIV irem OP_IREM Irem OP_LREM frem OP_FREM drem OP_DREM ineg OP_INEG Ineg OP_LNEG fneg OP_ENEG dneg OP_DNEG ishl OP_ISHL Ishl OP_ISHL Ishr OP_ISHR ishr OP_ISHR iushr OP_IUSHR iushr OP_IUSHR iand OP_IAND ior OP_IOR lor OP_IOR lor OP_IOR ixor OP_IXOR ixor OP_IXOR iinc OP_IXOR iinc OP_IZL i2f IGNORE_OPCODE i2d OP_L2I 12f OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D	ldiv	OP_LDIV		
Irem	fdiv	OP_FDIV		
Irem	ddiv	OP_DDIV		
frem OP_FREM drem OP_DREM ineg OP_INEG Ineg OP_LNEG Ineg OP_ENEG Ineg OP_ESHE Ineg Ineg Ineg Ineg Ineg Ineg Ineg Ineg	irem	OP_IREM		
drem	Irem	OP_LREM		
ineg	frem	OP_FREM		
Ineg	drem	OP_DREM		
fneg OP_FNEG dneg OP_DNEG ishl OP_ISHL Ishl OP_LSHL ishr OP_ISHR Ishr OP_LSHR iushr OP_IUSHR Iushr OP_IUSHR iand OP_IUSHR iand OP_IAND ior OP_IAND ior OP_IOR lor OP_IOR lor OP_IOR ixor OP_IXOR iinc OP_IXOR iinc OP_IXOR iinc OP_I2L i2f IGNORE_OPCODE i2d OP_L2I 12i OP_L2F 12d OP_L2D 12f OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D	ineg	OP_INEG		
fneg OP_FNEG dneg OP_DNEG ishl OP_ISHL Ishl OP_LSHL ishr OP_ISHR Ishr OP_LSHR iushr OP_IUSHR lushr OP_LUSHR iand OP_IAND land OP_IAND ior OP_IOR lor OP_IOR ixor OP_IXOR lixor OP_IXOR iinc OP_IXOR iinc OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2F 12d OP_L2D 12f OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D	Ineg	OP_LNEG		
ishl OP_ISHL Ishl OP_LSHL ishr OP_ISHR Ishr OP_LSHR iushr OP_IUSHR lushr OP_IUSHR iand OP_IAND iand OP_IAND ior OP_IOR lor OP_IOR ior OP_IOR ixor OP_IXOR Ixor OP_IXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_L2D 12i OP_L2F 12d OP_L2D I2d OP_L2D I2d OP_L2D IgNORE_OPCODE		OP_FNEG		
Ishl	dneg	OP_DNEG		
ishr OP_ISHR lshr OP_LSHR iushr OP_IUSHR lushr OP_LUSHR iand OP_IAND land OP_LAND ior OP_IOR lor OP_LOR ixor OP_LOR ixor OP_IXOR lxor OP_LXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_L2I 12i OP_L2I 12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	ishl	OP_ISHL		
Ishr	Ishl	OP_LSHL		
iushr OP_IUSHR lushr OP_LUSHR iand OP_IAND land OP_LAND ior OP_IOR lor OP_LOR ixor OP_IXOR linc OP_IXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2F 12d OP_L2D 12d OP_L2D 12d OP_L2D 12i IGNORE_OPCODE	ishr	OP_ISHR		
lushr OP_LUSHR iand OP_IAND land OP_LAND ior OP_IOR lor OP_LOR ixor OP_IXOR lxor OP_IXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D 12d OP_L2D 12d OP_L2D 12i IGNORE_OPCODE	Ishr	OP_LSHR		
iand OP_IAND land OP_LAND ior OP_IOR lor OP_LOR ixor OP_IXOR lxor OP_IXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2I 12f OP_L2F 12d OP_L2D I2d OP_L2D I2d OP_L2D I2i IGNORE_OPCODE	iushr	OP_IUSHR		
land OP_LAND ior OP_IOR lor OP_LOR ixor OP_IXOR lxor OP_LXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D 12d OP_L2D 12d OP_L2D IGNORE_OPCODE IGNORE_OPCODE	lushr	OP_LUSHR		
ior OP_IOR lor OP_LOR ixor OP_IXOR lxor OP_LXOR iinc OP_IINC i2I OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2I 12f OP_L2F 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D	iand	OP_IAND		
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ixor OP_IXOR Ixor OP_LXOR iinc OP_IINC i2l OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D 12d OP_L2D 12d OP_L2D 12d OP_L2D IGNORE_OPCODE	ior	OP_IOR		
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iinc OP_IINC i2I OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	ixor	OP_IXOR		
i2I OP_I2L i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	Ixor	OP_LXOR		
i2f IGNORE_OPCODE i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	iinc	OP_IINC		
i2d OP_I2D 12i OP_L2I 12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	i2I	OP_I2L		
12i OP_L2I 12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	i2f	IGNORE_OPCODE		
12f OP_L2F 12d OP_L2D f2i IGNORE_OPCODE	i2d	OP_I2D		
12d OP_L2D f2i IGNORE_OPCODE	12i	OP_L2I		
f2i IGNORE_OPCODE	12f			
	12d			
f2I OP_F2L	f2i			
	f2I	OP_F2L		

f2d	OP_F2D		
d2i	OP_D2I		
d2l	OP_D2L		
d2f	OP_D2F		
i2b	IGNORE_OPCODE		
i2c	IGNORE_OPCODE		
i2s	IGNORE_OPCODE		
Icmp	OP_LSUB, OP_JMPEQ		
fcmpl	OP_FSUB, OP_JMPLE		
fcmpg	OP_FSUB, OP_JMPGE		
dcmpl	OP_DCMP, OP_JMPLE		
dcmpg	OP_DCMP, OP_JMPGE		
ifeq	OP_JMPEQ		
ifne	OP_JMPNE		
iflt	OP_JMPLT		
ifge	OP_JMPGE		
ifgt	OP_JMPGT		
ifle	OP_JMPLE		
if icmpeq	OP_ISUB, OP_JMPEQ		
if icmpne	OP_ISUB, OP_JMPNE		
if icmplt	OP_ISUB, OP_JMPLT		
if icmpge	OP_ISUB, OP_JMPGE		
if icmpgt	OP_ISUB, OP_JMPGT		
if icmple	OP_ISUB, OP_JMPLE		
if acmpeq	OP_ISUB, OP_JMPEQ		
if acmpne	OP_ISUB, OP_JMPNE		
goto	OP_JMP		
jsr	OP_JSR		
ret	OP_RET		
tableswitch	OP_SWITCH		
lookupswitch	OP_SWITCH		
ireturn	OP_RETURN		
Ireturn	OP_LRETURN		
freturn	OP_RETURN		
dreturn	OP_LRETURN		
areturn	OP_RETURN		

return	OP_RETURNV	
getstatic	OP_RESOLVE	
putstatic	OP_RESOLVEP	
getfield	OP_RESOLVE	
putfield	OP_RESOLVEP	
invokevirtual	OP_RESOLVE	
invokespecial	OP_RESOLVE	
invokestatic	OP_RESOLVE	
invokeinterface	OP_RESOLVE	
xxxunusedxxx	IGNORE_OPCODE	
new	OP_NEW	
newarray	OP_NEW	
anewarray	OP_NEW	
arraylength	OP_ARRAYLENGTH	
athrow	OP_THROW	
checkcast	IGNORE_OPCODE	
instanceof	OP_INSTANCEOF	
monitorenter	OP_MUTEXINC	
monitorexit	OP_MUTEXDEC	
wide	OP_WIDE	
multianewarray	OP_NEW	
ifnull	OP_JMPEQ	
ifnonnull	OP_JMPNE	
goto_w	OP_JMP	
jsr_w	OP_JSR	

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